Operations Manual

50-II

Single Channel Time Base Corrector/Synchronizer

NTSC, PAL, or PAL-M

Copyright ©1994, by Prime Image, inc. All rights reserved.

The information in this manual is furnished solely for the purpose of providing instructions for installation and operation of the equipment described herein. Any other use of this information without the written consent of Prime Image, inc. is strictly prohibited.

3/94

Limited Warranty

Primary condition: This warranty is valid only after completion within ten (10) days of the enclosed warranty card and return of the original to Prime Image, inc., 662 Giguere Court #C, San Jose, CA 95133. A copy of this warranty should be kept for purchaser's records.

Prime Image, inc. warrants that each new unit is free of defects due to faulty material and/or improper workmanship. Prime Image, inc. further warrants, subject to the conditions set forth herein, that it will repair or replace any part of the enclosed unit which proves defective for a period of 3 years from the date of original purchase at retail, without charge for parts or labor.

Conditions of Warranty:

Unit Purchase: Original purchase must be from an authorized Prime Image, inc. distributor or representative.

Original Purchaser: This warranty is limited to the original purchaser of the unit at retail. Warranty is non-transferable.

Notification of Defect: The Prime Image, inc. distributor or representative who supplied the unit must be notified of any defect in material or workmanship.

Return of Unit to Prime Image, inc. (At Prime Image, inc. Option): Approval shall have been obtained from Prime Image, inc. before return of unit or any parts and accessories of unit. Prime image, inc. is not obligated to accept any unit or other goods without prior Prime Image, inc. authorization to do so.

Proper Shipment: The unit shall be shipped or delivered to a facility authorized by Prime Image, inc. to render the services provided hereunder in either its original package or a similar package affording an equal degree of protection.

Unauthorized Repair, Abuse, etc.: The unit shall not have been previously altered, repaired or serviced by anyone other than a service facility authorized by Prime Image, inc. to render such service; the serial number on the unit shall not have been altered or removed; the unit shall not have been subject to accident, misuse, abuse or operated contrary to the instructions contained in the accompanying manual. Replacement parts covered under this warranty carry only the unexpired term or portion of the original product warranty.

Prime Image, inc. reserves the right to make improvements on its products or parts without assuming any obligation to install them in previously manufactured units.

This warranty is in lieu of all other warranties expressed or implied, including, without limitation, any implied warranty. Prime Image, inc. shall have the final right of determination as to the existence and cause of any defect and the appropriate action required in accordance with this warranty. In no event shall Prime Image, inc. be liable for any collateral or consequential damages or losses associated with its product.

Table of Contents

Section 1
General Information
Scope of this Manual 5
Manual Improvements 5
Proprietary Information 5
Section 1.1 Product Description 5
Section 1.2 Specifications 6
Interface 6
Performance..... 6
Environmental 6

Section 2
Shipping
Section 2.1 Unpacking 7
Section 2.2 Inspection 7
Section 2.3 Accessories 8
Section 2.4 Packing.....8

Section 3
Installation
Section 3.1 Power and Environmental Requirements 9
Section 3.2 Mechanical Installation..... 9
Section 3.3 System Interconnection..... 10
Section 3.4 DIP Switch Settings 11
Mono 11

Section 4
Operation
Section 4.1 Controls and Indicators..... 12
Section 4.2 First Time Operation 15
Section 4.3 Operating Modes..... 15
Power OFF 15
Power ON 15
Normal Color, Genlock 16

Section 5
Servicing
Routine Maintenance 17
Unit Malfunction 17
Service Calls 17
Section 5.1 Troubleshooting 18

Appendix A
RS232 Control Option
RS232 Control Codes 19
Four-Byte Control Command 20
System Limitations 21
Examples 21
RS232 DIP Switch Settings 22

List of Illustrations

Figure	Subjec	Page
3-1.	Rear Panel Connectors	10
3-2.	DIP Switch S2	11
4-1.	First Function Front Panel Controls and Indicators	13
4-2.	Second Function Front Panel Controls and Indicators	14
A-1.	DIP Switch S1	22

List of Tables

Table	Subject	Page
2-1.	List of Accessories	8
3-1.	Interconnection Requirements	10
4-1.	Front Panel Controls and Indicators	12
5-1.	Troubleshooting	18
A-1.	RS232 Control Codes	19
A-2.	RS232 Format	20

Section 1
General Information

Scope of this Manual

This manual gives you the information necessary to install and operate the Model 50-II, Single Channel Time Base Corrector/Synchronizer, manufactured by Prime Image, inc.

Manual Improvements

Changes to this manual are documented by numbered engineering change orders. Individual users of this manual are encouraged to report any errors, omissions, or suggestions for improvement to the following address:

Publications Department
Prime Image, inc.
662 Giguere Court #C
San Jose, CA 95133
Phone: (408) 867-6519

Proprietary Information

The information in this manual is furnished solely for the purpose of providing instructions for installation and operation of the equipment described herein. Any other use of this information without the written consent of Prime Image, inc. is strictly prohibited.

Section 1.1 Product Description

The 50-II is a high performance digital Time Base Corrector (TBC) and Synchronizer that stabilizes (time base corrects) and synchronizes the input signal.

In addition to improving the time base stability of the video playback, the 50-II provides a convenient means for correcting other parameters of the video signal.

Section 1.2 Specifications

The following specifications apply at 20°C:

Interface

Input	Video (Composite)	1.0 Vpp, 75Ω, BNC
	DUB (S-Video)	
	C	700 mVpp, 75Ω, 4-pin S connector
	Y	1.0 Vpp, 75Ω, 4-pin S connector
Output	Video (Composite)	1.0 Vpp, 75Ω, BNC
	DUB (S-Video)	
	C	700 mVpp, 75Ω, 4-pin S connector
	Y	1.0 Vpp, 75Ω, 4-pin S connector
Genlock In		High impedance
RS232 Interface (optional)		25-pin D connector

Performance

Window	525 lines (NTSC and PAL-M) 625 lines (PAL)
Bandwidth	5.5 MHz (NTSC, PAL, and PAL-M)
Signal-to-Noise Ratio	58 dB
Differential Phase	1°
Differential Gain	1%
K-Factor (2T)	1%
Sampling	8-bit luma, 8-bit chroma
Residual Time Base Error	±15 ns
Composite Auto Bypass (full unit)	If input power or power supply fails or is removed

Environmental

Operating Temperature		+32° to +113°F (0° to +45°C)
Operating Humidity		10% to 95% RH, non-condensing
Power Supply (AC)		117 or 220 VAC, ±10%, 50 or 60 Hz
Power Dissipation		15 Watts
Power Supply (DC), optional		9 to 18 volts DC at approx. 750 ma. to 400 ma., respectively
	or	18 to 36 volts DC at approx. 400 ma. to 190 ma., respectively
	or	36 to 72 volts DC at approx. 190 ma. to 100 ma., respectively
Width		19" (48.3 cm)
Height		1.75" (4.45 cm)
Depth		15" (38.1 cm)
Weight		16 lbs. (7.3 kg)

Section 2
Shipping

This section contains the information necessary for you to unpack, inspect, repack, and ship the 50-II System.

Section 2.1 Unpacking

The 50-II is shipped, fully assembled, with the board installed, in a re-usable cardboard shipping carton which may be opened with a sharp, short-blade knife. Within the carton the 50-II is supported in foam packing material and wrapped in a poly bag. Accessories are contained in a separate bag below the unit. An external pouch contains a packing list delineating the contents of the carton. The shipping weight of the 50-II with carton is less than 40 lbs. and may be carried with care by one person.

Section 2.2 Inspection

The individual parts of your unit were inspected prior to shipment, and the unit should be in good operating order. Carefully inspect the unit and accessories for any physical damage sustained in transit. If the unit is received in a damaged condition, notify your dealer or the factory immediately, and file a claim with the carrier.

Please verify that you have received all the items that should accompany the unit. Refer to the accessory parts list in Section 2.3. If you have any difficulties with the unit, if it is not operating properly, or if accessories are missing, contact your dealer or the factory Customer Service Department.

Retain the carton and original packing materials in case the unit must be shipped.

Section 2.3 Accessories

The following table lists the accessories you should have received with your 50-II System:

Table 2-1. List of Accessories

Description	Quantity
Line cord, AC power	1
50-II Operations Manual	1
Packing carton with spacers and bag	1

Section 2.4 Packing

When repacking the unit for shipping, be sure that the unit and accessories are secured in the configuration described in Section 2.1. Check that all seams are securely sealed with tape, and the carton is clearly marked.

Section 3
Installation

This section gives you the information necessary to properly install the 50-II System including power, environmental, mounting, and interconnection requirements.

Section 3.1 Power and Environmental Requirements

The 50-II System is designed to operate from a power source providing 117 VAC or 220 VAC, single phase 50 or 60 Hz power.

To protect operating personnel and equipment, the unit should only be connected to a three-pronged grounded receptacle using the power cable provided. See Figure 3-1 for the location of the power cable connector and the main power switch.

Section 3.2 Mechanical Installation

The 50-II is shipped ready for bench-top operation with four rubber feet on the case bottom. If rack mounting is desired, the unit may be mounted directly to the rack by screws through the mounting ears. If a unit is mounted directly below the 50-II, remove the feet from the 50-II case bottom to allow sufficient vertical clearance.

Section 3.3 System Interconnection

All connections to the 50-II System are made at the rear panel. The following table below describes the interconnection requirements.

Table 3-1. Interconnection Requirements

Name	Characteristics	Function
AC Power*	117 or 220 VAC, ±10%, 50 or 60 HZ	Red indicator light on front panel.
Comp In	1 Vpp, 75Ω, BNC	Uncorrected video input.
Y In C In	1 Vpp, 75Ω 700 mVpp, 75Ω 4-pin S connector	Uncorrected video input.
Genlock In	High impedance	Reference sync input from external generator. Video Outputs will be locked to this input.
Comp Out	1 Vpp, 75Ω, BNC	Corrected video output.
Y Out C Out	1 Vpp, 75Ω 700 mVpp, 75Ω 4-pin S connector	Corrected video output.
RS232 Interface (optional)	25-pin D connector	Remote interface.
*For information on the DC Power option, see the Addendum for this manual.		

Figure 3-1 shows locations of the rear panel connectors.

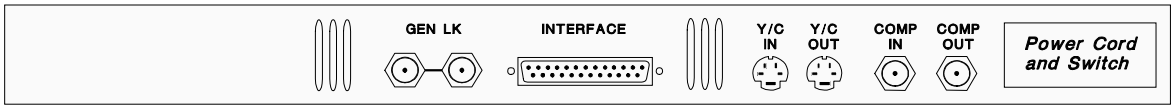

Figure 3-1. Rear Panel Connectors

The unit may be connected to your system according to the desired application using RG-59/U (or equivalent) coaxial cable terminated with BNC connectors. For first time operation, see Section 4.2.

Section 3.4 DIP Switch Settings

Internal DIP switch S2 controls some functions. Table 3-2 shows the DIP switches settings and their functions.

To make DIP switch adjustments, remove the six screws securing the case top and remove the top. S2 is located at the back of the unit on the right side.

Table 3-2. DIP Switch S2

No.	Label	Description	On	Off
1	MONO	Mono	Turns off burst at output.	Forces burst at output.
2	FLD1/2	Field Select**	Selects field 2.	Selects Field 1.
3	Comb/BP	3-Way Adaptive Comb Filter*	Enables comb	Disables comb (notch filter).

* "EE" Option available from Prime Image
** Controls whether Field 1 or Field 2 is displayed during a strobe field. All units are shipped with Field 1 selected.

Note: DIP switches 4 through 8 are not currently implemented.

Mono

For the transmission of black and white signals, broadcasters often turn off the subcarrier burst to reduce color noise in the picture. The 50-II always produces a subcarrier burst unless Mono is selected. Mono turns off burst at the output when the input is a black and white signal (no burst present).

Section 4
Operation

This section provides the information necessary to operate the 50-II. It includes descriptions of the operating controls and indicators, instructions for first-time operation, and descriptions of the operating modes.

Section 4.1 Controls and Indicators

Front panel controls provide two sets of functions. Tables 4-1 describes first function controls and indicators. Table 4-2 describes second function controls and indicators, which are activated by pressing up on the INPUT toggle switch while adjusting the control. Second functions are indicated on the front panel in blue lettering.

Figure 4-1 shows locations of the front panel controls and indicators.

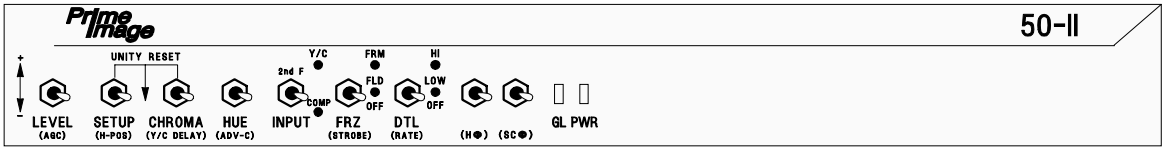

Figure 4-1. Front Panel Controls and Indicators

Table 4-1. First Function Front Panel Controls and Indicators

Name	Characteristics	Function
Video Level Control	Push up to increase, down to decrease.	Adjusts video input.
Setup Level Control	Push up to increase, down to decrease.	Adjusts video input.
Chroma Level Control	Push up to increase, down to decrease.	Adjusts video input.
Hue	Push up to increase, down to decrease.	Adjusts video input.
Input Select (2nd F)	Push down to toggle between inputs (Y/C or Comp). LEDs indicate selection. Hold up to enable second functions of other controls (see Table 4-2).	Selects input or second function.
Freeze (FRZ)	Push up to cycle between freeze field and freeze frame, down for OFF. Red LED indicates selection.	Selects field/frame freeze.
Detail (DTL) Enhancement	Push up to cycle between low-level and high-level enhancement, down for OFF. Red LED indicates selection.	Selects level of detail enhancement.
Genlock (GL) Indicator	Green LED	Indicates presence of external genlock signal.
Power Indicator	Red LED	Indicates presence of AC power or optional DC power.
Unity Reset	Push down simultaneously Setup and Chroma.	Resets all first function controls to unity.

Table 4-2. Second Function Front Panel Controls and Indicators

All these functions are activated by pressing up on the INPUT/2nd F switch while adjusting the control as indicated.

Name	Characteristics	Function
AGC Select	Push up to turn on AGC (Automatic Gain Control), down to turn off AGC.	Adjusts level of video input.
H-Position (H-POS)	Push up to move picture to right, down to move picture to left.	Adjusts position of video input picture.
Y/C Delay	Push up to move the color to the right, down to move the color to the left.	Adjusts video input color left and right.
Advanced Chroma (ADV-C)	Push up once to shift color up one line, twice to shift up two lines, and three times for three lines. Push down once to shift color down one line, twice to shift down two lines, and three times for three lines. Unity reset value is 0 lines.	Adjusts video input color up and down.
2nd F Input	Hold up to enable second function, down to toggle between Y/C and Composite inputs. LEDs indicate selection.	Selects second function or input for each channel.
Strobe*	Push up to toggle between field strobe and frame strobe, down for OFF. Red LED indicates selection.	Selects field/frame strobe for each channel.
Rate	Push up to increase strobe rate, down to decrease strobe rate. Red LED blinks at the selected rate of strobe.	Selects rate of strobe.
Horizontal Phase (Hφ)	Push up for delayed timing, down for advanced. Push down simultaneously with SCφ to reset to unity.	Adjusts relative timing of output video sync to reference video.
Burst Phase (SCφ)	Push up to increase, down to decrease. Push down simultaneously with Hφ to reset to unity.	Adjusts relative timing of output video burst to genlock reference.
Comb Filter	While holding the 2nd F switch up and FRZ down, push up on Level to turn on comb filter, down to turn off comb.	Separates composite input signal into its luma and chroma signals.
2nd Function Unity Reset	Push down simultaneously (H-POS) and (Y/C Delay).	Resets all second function controls to unity.

*Strobe Field: Achieve a "stop action" effect by freezing a field at a regular rate.
Strobe Frame: Achieve a "stop action" effect by freezing a frame at a regular rate.

Section 4.2 First Time Operation

The following procedures should be followed after installing the 50-II to ensure proper operation in your system environment. If proper operation cannot be obtained or if malfunction is suspected, refer to *Unit Malfunction* in Section 5.

1. Connect the COMP OUT connector to a video monitor using 75Ω coaxial cable.

2. Activate system inputs to the 50-II from a recorder or a test signal generator at COMP IN and a reference generator at GEN LK, if desired.

3. Set AC power switch to ON, and verify the following:

    a. If a Genlock reference is connected, the green GL indicator on the front panel is illuminated.

    b. A normal picture is displayed on the monitor.

    c. Each of the four video controls (Video level, Chroma level, Set-up level, and Hue) operate when activated.

    d. When Chroma and Setup are pushed down simultaneously, all four video controls return to unity.

Section 4.3 Operating Modes

This section describes the settings for the various operating modes.

Power OFF:

- The signal present at COMP IN is directly connected to COMP OUT.

Power ON:

- The AC input is connected, and the AC power switch is ON.

- The COMP OUT connector carries a corrected version of the input video from COMP IN.

Normal Color, Genlock:

- The AC switch is ON, and at least one indicator is lit.
- All controls are active, and the 50-II is correcting video.
- Operation of the 50-II is fully automatic.
- The 50-II may free-run on its internal sync generator or lock to an external reference input.
- If a reference input is detected, the 50-II will phase-lock to signal, and the Genlock indicator will be ON.
- The output, when genlocked, is RS-170A compatible and factory-set to the correct sync burst phase relationship.
- The sync and burst phases may be adjusted manually using the front panel controls (Hφ and Scφ), if desired. To reset to unity, push down both buttons simultaneously.

Section 5
Servicing

This section gives you information about maintaining your 50-II System, obtaining service, and troubleshooting.

Routine Maintenance

The 50-II System is inherently a low maintenance unit that requires only a periodic dusting internally, when used in an unfiltered environment.

Unit Malfunction

All 50-II systems are designed and tested to perform as outlined previously in this manual. The manufacturer does not assume any responsibility for damage or malfunction resulting from operation of this unit outside the published environmental or interface specifications, or improper operation resulting from custom interfacing or any unauthorized internal modification.

If you encounter a malfunction during the warranty period, call your dealer or our Customer Service Department at the factory to arrange for service. DO NOT attempt to service this unit during the warranty period; to do so will void the warranty.

You may have out-of-warranty products repaired by your dealer or authorized repair facility.

Service Calls

For service, call Prime Image, inc. at (408) 867-6519. When you call for service, give the following information about your unit. It will help your dealer in diagnosis and repair:

1. The model and serial number of your unit.

2. The system configuration (including VCR types).

3. The problem you are having and the specific effect on the picture.

Section 5.1 Troubleshooting

The following table provides troubleshooting information for frequently encountered problems:

Table 5-1. Troubleshooting

Condition	**Possible Cause**
Nothing happens at power ON.	Fuse blown. Line plug loose.
Fuse always blows at power ON.	Wrong line voltage.
Output video not corrected.	50-II power supply is off.
Output corrected but rolls vertically.	Genlock input missing.
Output corrected but picture not framed horizontally.	Misadjustment of Hφ.

Appendix A
RS232 Control Option

This appendix describes the RS232 control codes for the 50-II. It assumes the reader is knowledgeable in decimal, HEX, binary, and two's complement numbering systems and has the ability to convert between any two of them.

RS232 Control Codes

The 50-II uses a standard RS232 (9-wire) 25-pin connector pinned out for and internally wired for handshaking. A valid control code is made up of 4 bytes transmitted sequentially over the RS232 port. This 4-byte packet contains board ID, a control function code, and control data. The board ID must match the channel number (0) to be considered a valid signal by that board. The control function code determines which level or setting will be modified (i.e., video level, strobe, etc.). The control data code determines how the function will be modified. For varied level function, control data is an offset to the initial unity value. For other functions, specific bits of control data indicate settings (Table A-1).

Table A-1 RS232 Control Codes

Control Function		**Control Data**	**Information**
Code (F4-F0)	**Name**	**D7 D6 D5 D4 D3 D2 D1 D0**	**Resolution (Range) or Format**
00h	No Operation	X X X X X X X X	X=don't care (ignored)
01h	Video Level	D7 X X D4 D3 D2 D1 D0	6-bit 2's comp -32 (E0h) thru +31 (1Fh)
02h	Chroma Level	D7 D6 D5 D4 D3 D2 D1 D0	8-bit 2's comp -128 (80h) thru +127 (7Fh)
03h	Hue	D7 X X D4 D3 D2 D1 D0	6-bit 2's comp -32 (E0h) thru +31 (1Fh)
04h	Setup	D7 X X D4 D3 D2 D1 D0	6-bit 2's comp -32 (E0h) thru +31 (1Fh)
05h	Freeze/Strobe	Fz St Fd X A X F1 F0 Note: F1 and F0 are observed only if Fz, St, or Fd is selected.	Fz,St = mode 0,0 = off (live video) 0,1 = Strobe 1,0 = Freeze 1,1 = Strobe F1,F0 = Field select 0,0 = DIP switch setting 0,1 = field 1 1,0 = field 2 1,1 = frame Fd = Field mode 0 = off (normal) 1 = Forces unit to display the F1,F0 selection in any mode A = Acquire 0 = off (normal) 1 = Acquire new freeze Note: Fz must also be selected
06h	Input/AGC	AG X X X X X C In	AG = AGC In = Input Select C = Comb 0 = off 0 = comp 0 = off 1 = on 1 = Y/C 1 = on
07h	Detail/Black & White	BW X X X X X D1 D0	BW = Blk & Wht D1,D0 = Detail 0 = off, 1 = on 0,0 = off 0,1 = low 1,0 = high 1,1 = undefined

08h	Genlock Select	X X X X X X G1 G0	G1,G0 = Genlock Select 0,0 = Master genlock 1,0 = CH 0 genlock 0,1 = Independent genlock 1,1 = Free run
09h	Horiz. Phase	D7 X X D4 D3 D2 D1 D0	6-bit 2's comp -32 (E0h) thru +31 (1Fh)
0Ah	Sub Carrier Phase	D7 D6 D5 D4 D3 D2 D1 D0	8-bit 2's comp -128 (80h) thru +127 (7Fh)
10h	Remote Data (Board may not respond until 1 sec. after power up)	R7 R6 R5 R4 R3 R2 R1 R0	R7,R0 = Remote data 00h = Return bd ID byte '10XXdcba'
11h	Horiz. Position	D7 X X D4 D3 D2 D1 D0	6-bit 2's comp -32 (E0h) thru +31 (1Fh)
12h	Y/C Delay	D7 X X X X X D1 D0	3-bit 2's comp -4 (FCh) thru +3 (03h)
13h	Advanced Chroma	X X X X X X A1 A0	A1,A0 = Lines adv. 0,0 = 0 lines 0,1 = +1 line 1,0 = +2 lines 1,1 = +3 lines
14h	Strobe Rate	X X D5 D4 D3 D2 D1 D0	6-bit binary 0 (00h) thru +63 (3Fh)
18h-1Fh	Factory settings	! ! ! ! ! ! ! !	!!!Do NOT use these codes!!!

Note: Unused function codes are reserved for future enhancements or other products and should not be used. X's indicate currently ignored bits, use 0's, if possible, to maintain future compatibility.

Four-Byte Control Command

The board must receive all four bytes, or words, in the order 0 to 3 to be recognized as a valid control command. Each of the four words is composed of two bits to identify the word, zero to two bits as keys for the board to validate the word, and the remaining bits for data.

Table A-2 RS232 Format

9600 BAUD, 10-bit (Start, 8 bits of data, Stop)

The following four bytes must be received in order as a packet of information:

	WORD KEY..... Data							
WORD 0	0	0	1	1	0	0	0	IDA
WORD 1	0	1	0	F4	F3	F2	F1	F0
WORD 2	1	0	1	0	D7	D6	D5	D4
WORD 3	1	1	0	0	D3	D2	D1	D0

MSB LSB

IDA = Board ID 0h

F4 - F0 = Function code 0 - 1Fh

D8 - D4 = Upper nibble of Control Data

D3 - D0 = Lower nibble of Control Data

System Limitations

The control system requires up to 50 milliseconds to process a valid control command (4-byte packet). The system has a buffer capable of receiving 16 valid control commands before the first one has been processed. Therefore, there is a limit to the amount of control commands received in a given time. If more than 16 control commands are transmitted to the board at one time, all commands after the 16th must be separated by 50 milliseconds.

Examples

SETUP:
This is an example of transmitting a command to modify the value of the setup control. It has been determined that a data value of +13 is needed to correct the setup (brightness) of the picture of board #0.

WORD 0
The setting of IDD-IDA for board #0 is 0 0 0 0. Using Table C-2, WORD 0 is found to be the following:

WORD 0 = 0 0 1 1 **0 0 0 0**, equivalent to 30h in HEX.

WORD 1
The function code for setup is 04h or 0 0 1 0 0 converted to binary.

WORD 1 = 0 1 0 0 0 1 0 0, equivalent to 44h in HEX.

WORDs 2 and 3
The control data value +13 is converted to its two's complement binary equivalent:

0 0 0 0 1 1 0 1 (=0Dh).

The upper four bits are assigned to WORD 2 and the lower four bits to WORD 3:

WORD 2 = 1 0 1 0 **0 0 0 0**, equivalent to A0h in HEX.
WORD 3 = 1 1 0 0 **1 1 0 1**, equivalent to CDh in HEX.

Therefore, to send the command SETUP = +13 to board #0, the four bytes 31h 44h A0h CDh must be sent through the RS232 port.

For functions that are settings and do not have variable levels, Table C-1 shows the appropriate bits. For example, to perform a field 1 freeze, the control data is the following:

1 0 0 0 0 0 0 1 = 81h (use 0s for Xs).

FREEZE ON: To perform field 1 freeze on board #2, send 32h 45h A8h C1h through the RS232 port.

STROBE ON: To perform default field strobe on board #3, send 33h 45h A4h C0h through the RS232 port.

FREEZE OFF
STROBE OFF: To stop freeze or strobe on board #4, send 34h 45h A0h C0h through the RS232 port.

RS232 DIP Switch Settings

RS232 DIP switch settings affect the remote control option. For access to the DIP switch, remove the cover of the 50-II unit. DIP switch S1 is in the back near the center. For computer operation, all four positions should be set to Off.

Warning
S1 position #1 set to On, applies 12V to the RS232 line. Keep Off for computer operation.

Figure A-1 shows the details of S1.

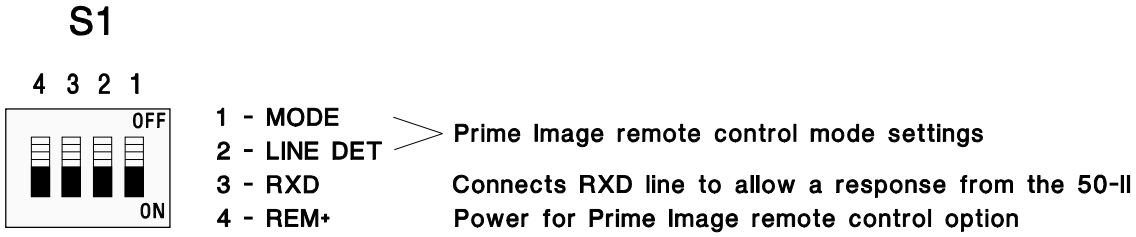

Figure A-1. DIP Switch S1